

AR-B1991

**Pentium LGA775 High Performance 3D
Gaming Motherboard**

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Introduction

1.1 Specifications:

CPU : Intel LGA775 CPU.

Chipset : Intel 945G and ICH7.

RAM memory : Two DDR2 DIMM Socket support to 2GB.

Display Controller : Intel 945G Supports non-interlaced CRT monitors.

IDE Interface : One 44pin 2.0mm IDE channel.

Compact Flash™ interface : Supports Two Compact Flash™ Type II socket for Compact Flash Disk Share with IDE.

Series ports : Six high-speed 16C550 compatible UART ports.

USB port : Support Six USB 2.0 compatible ports(four connector,two pin heater).

Audio Connector : Supports Line-in, Line-out.

PS/2 Mouse/Keyboard Connector

Watchdog timer : Time setting form 1 to 255 second / minute System Reset generate when CPU did not periodically trigger the timer.

REALTEK LAN Controller : 1 port REARTEK 8100C 10/100BASE-TX,1 port 8110S-32 10/100/1000BASE-TX.Connected to your LAN through RJ45 connector.

Dimension : 310mm(W) X 200mm(L).

Operating Temperature : -10° ~ 55° C (CPU needs Cooler).

Trusted Platform Module(TPM1.2)

The basis of Trusted Computing is the Trusted Platform Module, or TPM. The TPM is a small piece of silicon affixed in a device. It securely stores digital keys, certificates and passwords and is more difficult to attack virtually or physically.

INFINEON'S TPM Security Solution provides a comprehensive hardware and software solution for safer computing targeted for today's notebook and desktop architectures. The Infineon TPM Management software enables the easy use of the most important trusted computing functions such as authentication, data integrity, system integrity, confidentiality, and availability.

The detail of the TPM functions and installation please refer to following web-address and driver CD folder "Infineon TPM"

<http://www.infineon.com>

1.2 What You Have

In addition to this *User's Manual*, the board package includes the following items:

System board (AR-B1991)

User's Manual

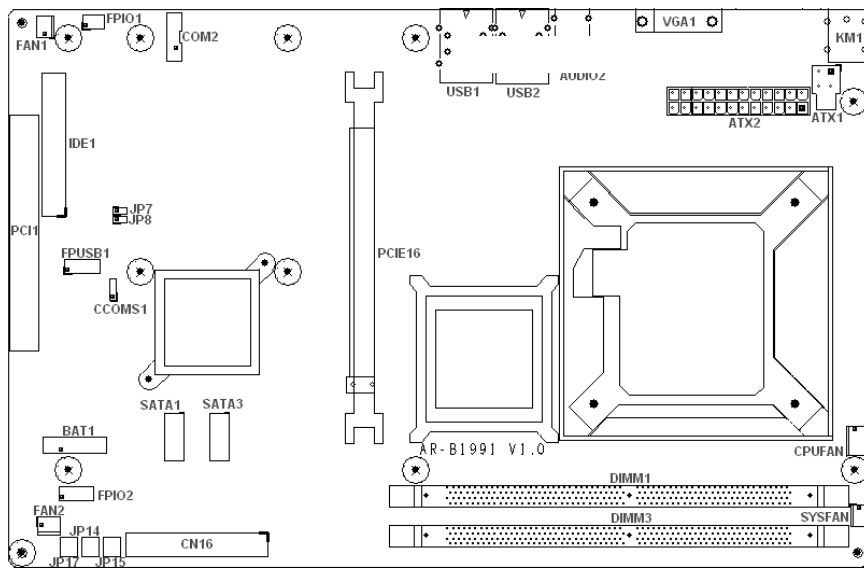
Drive CD

2

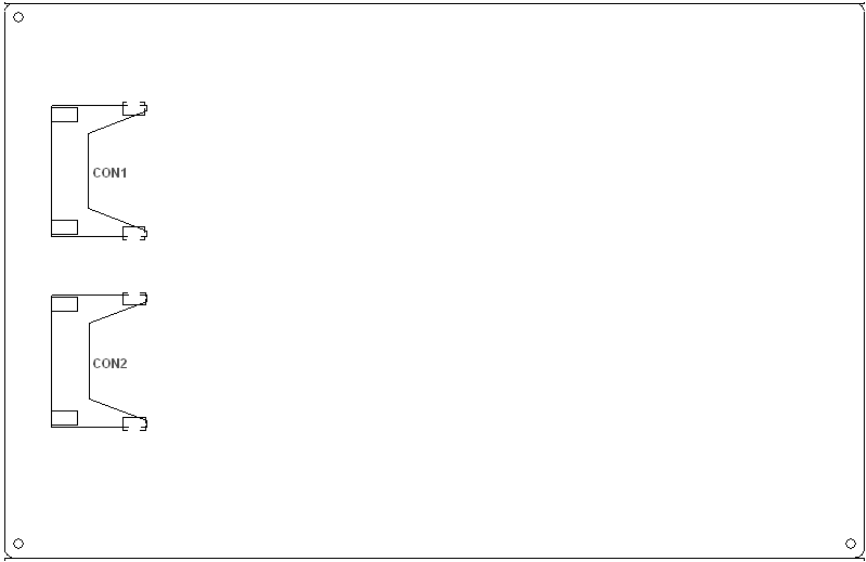
Installation

This chapter describes how to install system. At first, the layout of board is shown, and the unpacking information that you should be careful is described. The jumpers and switches setting for the board configuration.

2.1 System Board Layout



Top Placement



Bottom Placement

2.2 Jumper & Header DESCRIPTION

CCMOS1 : CMOS reset pin header.

Default setting : 1-2 short

CCMOS1	DESCRIPTION	
1-2	Normal Operation	1 
2-3	Reset CMOS	2 
		3 

JP7(for CON1) & JP8(for CON2) : Select CF Master/Slave mode.

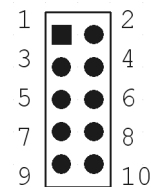
Default setting : JP7 open, JP8 open

JP7	DESCRIPTION	
Short	Master	1 
Open	Slave	2 

JP8	DESCRIPTION	
Short	Master	1 
Open	Slave	2 

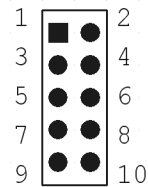
FPIO2 : HDD LED, Reset, PSON Connector.

PIN	DESCRIPTION	PIN	DESCRIPTION
1	HDD LED+	2	REV
3	HDD LED-	4	REV
5	RESET-(GND)	6	PSON- (GND)
7	RESET+	8	PSON+
9	NC	10	NC



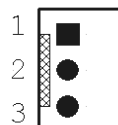
FPUSB1 : USB4, 5(FPUSB1) Connector.

PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC	2	VCC
3	DATA-(port4)	4	DATA-(port5)
5	DATA+(port4)	6	DATA+(port5)
7	GND	8	GND
9	NC	10	NC

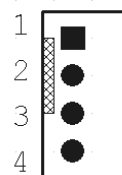


FAN1, 2, SYSFAN: Fan Connector.

PIN	DESCRIPTION
1	GND
2	FAN+ (12V)
3	FANSP

**CPUFAN: Fan Connector.**

PIN	DESCRIPTION
1	GND
2	FAN+ (12V)
3	FANSP
4	Control



JP17 : Selection COM1 is RS232 or RS422/485
Default setting : 1-2 short

JP17	DESCRIPTION
1-2	RS23
3-4,5-6	RS422
5-6	RS485



JP14,JP15 : Selection COM1(CN16 pin 2,3 and pin 6,7) signals are RS232 or RS422/485.

Default setting : JP14(1-3,2-4 short),JP15(1-3,2-4 short)

JP14	JP15	DESCRIPTION
1-3,2-4	1-3,2-4	COM1=RS232
3-5,4-6	3-5,4-6	PIN 2,3/6,7=RS422
3-5,4-6	Don't care	PIN 2,3=RS485

**FPIO1 : IR Connector.**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	NC	2	NC
3	VCC	4	GND
5	TX	6	RX

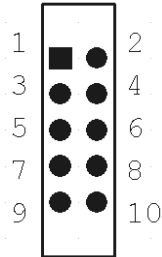


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Connection(AR-B1991)

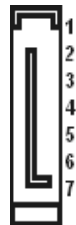
COM2 : RS-232 Serial port (2.0mmPin Header).

PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD	2	RX
3	TX	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC



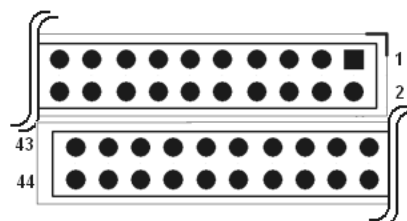
SATA1,3 : Serial ATA Port .

PIN	DESCRIPTION
1	GND
2	TX+
3	TX-
4	GND
5	RX+
6	RX-
7	GND

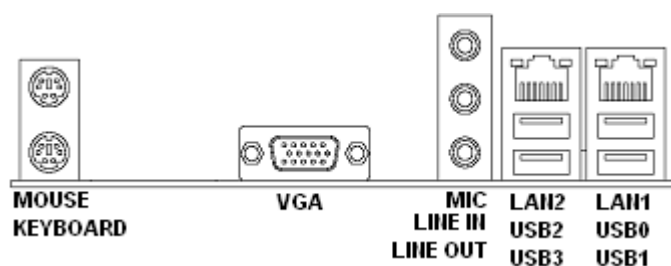


CN16 : COM1,COM3~6 Connector .

PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD1	2	RX1
3	TX1	4	DTR1
5	DSR1	6	RTS1
7	CTS1	8	RI1
9	DCD3	10	RX3
11	TX3	12	DTR3
13	DSR3	14	RTS3
15	GND	16	CTS3
17	RI3	18	DCD4
19	RX4	20	TX4
21	DTR4	22	DSR4
23	RTS4	24	GND
25	CTS4	26	RI4
27	DCD5	28	RX5
29	TX5	30	DTR5
31	DSR5	32	RTS5
33	GND	34	CTS5
35	RI5	36	DCD6
37	RX6	38	TX6
39	DTR6	40	DSR6
41	RTS6	42	GND
43	CTS6	44	RI6



Mouse, Keyboard, VGA, Line Out/In, Mic, Lan2(Giga port),Lan1(10/100Mb port), USB Connector.



4

Award BIOS Setup

4.1 Introduction

This chapter discusses the Setup program built into the BIOS. The Setup program allows users to configure the system. This configuration is then stored in battery-backed CMOS RAM so that it retains the Setup information while the power is off.

4.2 Starting Setup

The BIOS is immediately active when you turn on the computer. While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or
2. By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

4.3 Using Setup

In general, you can use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more details about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
Esc key	Exit Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

4.4 Main Menu

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

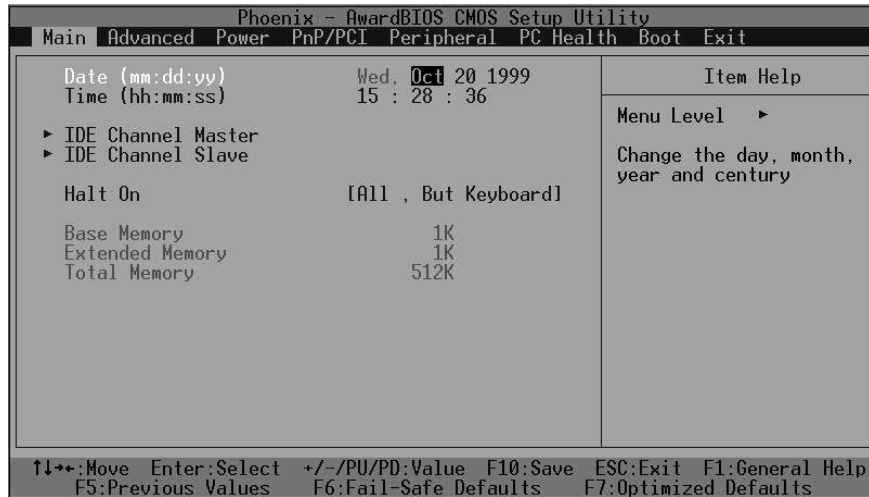


Figure 1: The Main Menu

Main Menu Selections

Item	Options	DESCRIPTION
Date	MM DD YYYY	Set the system date.
Time	HH : MM : SS	Set the system time
IDE Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Slave	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
Halt On	All Errors No Errors	Select the situation in which you want the BIOS

	All, but Keyboard All, but Diskette All, but Disk/Key	to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

Table 1 Main Menu Selections

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive.

Figure 2 shows the IDE primary master sub menu.

IDE HDD Auto-Detection[Press Enter]

IDE Primary Master[Auto]

Access Mode [Auto]

Capacity0MB

Cylinder0

Head0

Precomp0

Landing Zone0

Sector0

Figure 2 IDE Primary Master sub menu

Use the legend keys to navigate through this menu and exit to the main menu. Use Table 2 to configure the hard disk.

Item	Options	DESCRIPTION
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
Access Mode	CHS LBA Large Auto	Choose the access mode for this hard disk

Table 2 Hard disk selections

4.5 Advanced BIOS Features

This section allows you to configure your system for basic operation.

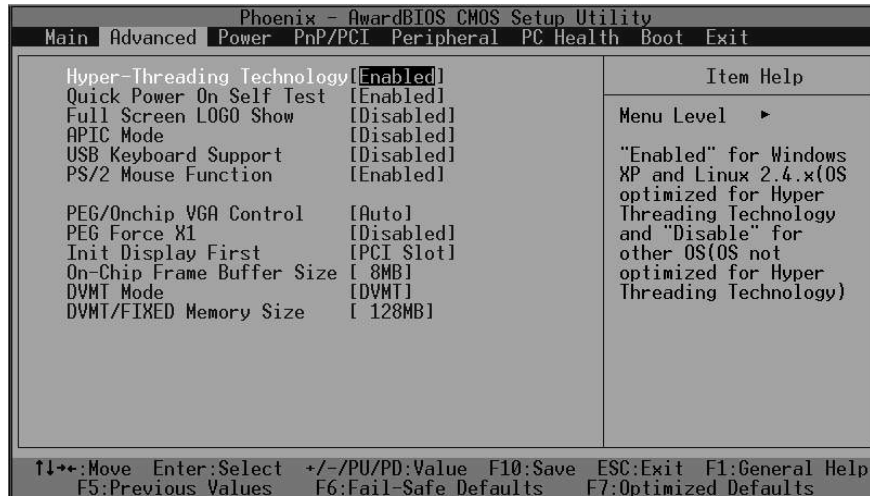


Figure 3 Advanced menu

Hyper-Threading Technology

"Enabled" for Windows XP and Linux 2.4.x(OS optimized for Hyper Threading Technology)and "Disable" for other OS(OS not optimized for Hyper Threading Technology)

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST
Disabled	Normal POST

Full Screen LOGO Show

This item allows you to enable or disable show full screen LOGO.
The Choice: Enabled, Disabled.

APIC Mode

This item allows use Advanced Programmable Interrupt Controller feature. The Choice: Enabled, Disabled.

USB Keyboard Support

This item allows you to enable or disable USB keyboard support.
The Choice: Enabled, Disabled.

PS/2 Mouse Function

Disabled-prevents any installed PS/2 mouse from functioning but frees up IRQ12.Enabled-allows the operating system to determine whether to enable or disable the mouse. Choice: Enabled, Disabled.

PEG/Onchip VGA Control

This item allows you to choice use VGA Care or Onboard VGA or Auto detect each of the device.

PEG Force X1

This item is force VGA Care slot can use X1 PCI-E device.
Choice: Enabled, Disabled.

Init Display first

This item choice which one is first display.
Choice: PCI Slot, PCI Ex

On-Chip Frame Buffer Size

This item is setting OnBoard Frame Buffer Size.
Choice: 8M, 1M

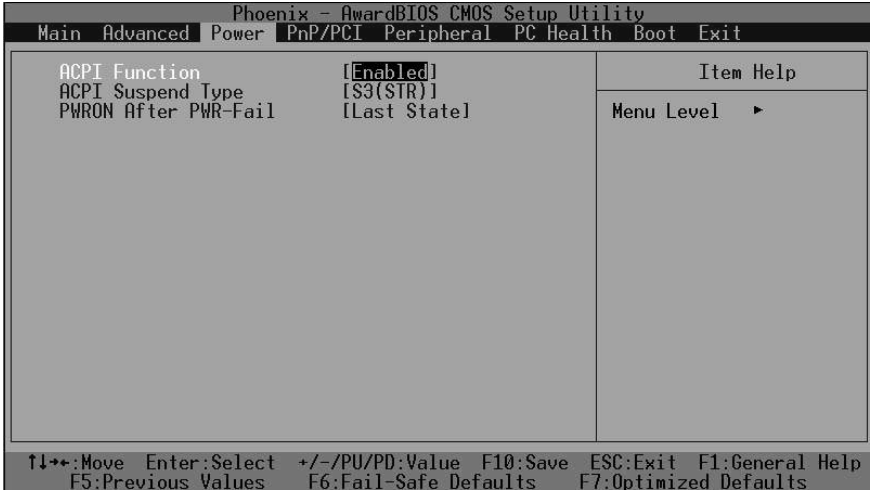
DVMT Mode

This item allows you to choise use fixed or dynamic share memory.
Choice: Fixed, DVMT, BOTH

DMVT/FIXED Memory Size

This item is choise how many big size if you select DVMT Mode is Fixed.
Choice: 64MB, 128MB, 224MB.

4.6 PnP/PCI Configuration Setup



ACPI Function
This item allows you to enable or disable Advanced Configuration and Power Management (ACPI) function.
The Choice: Enabled, Disabled.

ACPI Suspend Type
This item allows you to Choose Suspend Type for ACPI function.
The Choice: S1(Pos), S3(STR), S1 & S3.

PWRON After Power-Fail
This item allows you to choose the Option of Power Status after Power Fail by ATX Power Supply.
The Choice: Former-STS, On, Off.

4.7 PnP/PCI Configuration Setup

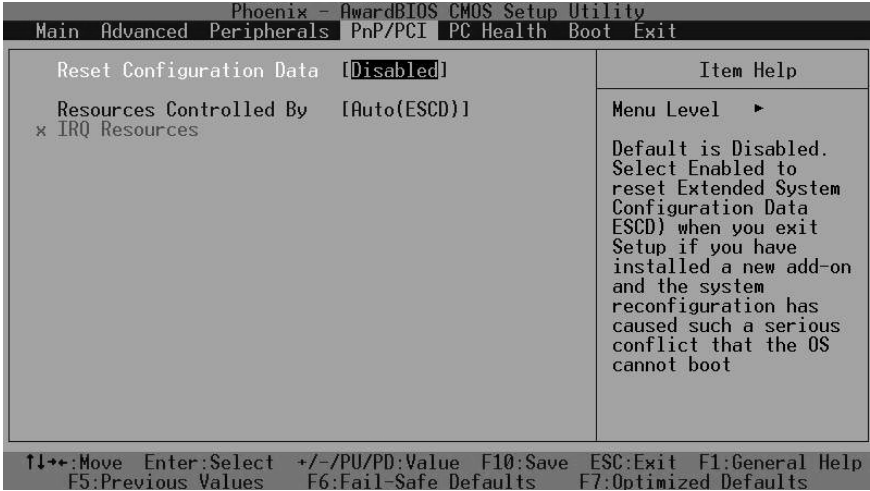


Figure 4 PnP/PCI menu

Resource controlled by

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to “manual” choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “>”).
The choice: Auto(ESCD), Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

IRQ3/4/5/7/9/10/11/12/14/15 assigned to

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with

the Plug and Play standard whether designed for PCI or ISA bus architecture.

The Choice: PCI Device, Reserved.

4.8 Peripheral

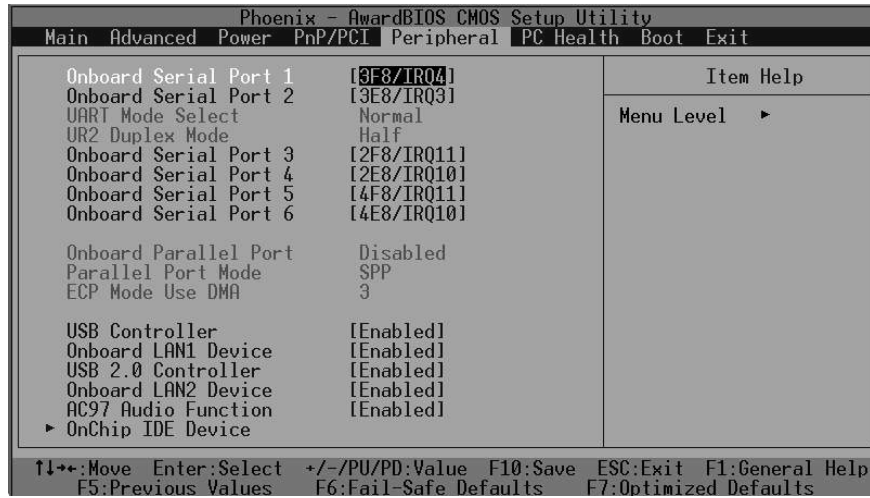


Figure 5 Peripheral menu

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto

UART Mode Select

Select the Function Mode for UART.

The choice: IrDA, ASKIR, Normal

Onboard Serial Port 3/Port 4/Port 5/Port 6

Select an address and corresponding interrupt for the first and second serial ports.

The COM3 choice: 3F8/IRQ11, 2E8/IRQ11, 3E8/IRQ11, 2F8/IRQ11, Disabled

The COM4 choice: 3F8/IRQ10, 2E8/IRQ10, 3E8/IRQ10, 2F8/IRQ10, Disabled

The COM5 choice: 4F8/IRQ11, 4E8/IRQ10, Disabled

The COM6 choice: 4F8/IRQ11, 4E8/IRQ10, Disabled

Onboard Parallel Port

Select 3BC/IRQ7 to enable On Board Parallel Port as first Parallel Interface.

The choice: Disable, 378/IRQ7, 278/IRQ5, 3BC/IRQ7.

USB Controller

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

The Choice: Enabled, Disabled.

OnBoard LAN1 Device

The Choice: Enabled, Disabled.

USB 2.0 Controller

This Entry is for disable / enable EHCI controller only. The Bios itself may / may not have high speed USB support. If the Bios has high speed USB support built in, the support will be automatically turn on when high speed device were attached.

The Choice: Enabled, Disabled.

OnBoard LAN2 Device

The Choice: Enabled, Disabled.

AC97 AUDIO

The Choice: Auto, Disabled.

OnChip IDE Device

The item contain IDE Device and S-ATA Device.

The Choice: Enabled, Disabled.

4.9 PC Health

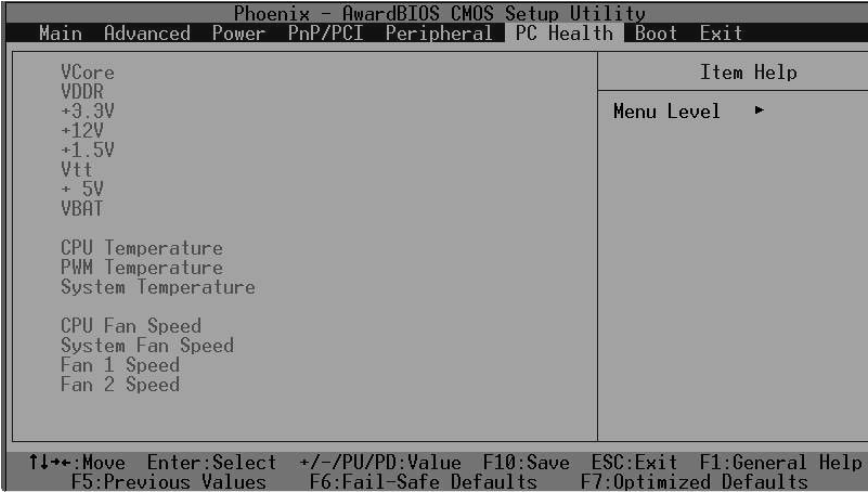


Figure 5 H/W Monitor menu

Show system information

This item show the system all information to contain voltage, temperature and fan speed.

4.10 Boot

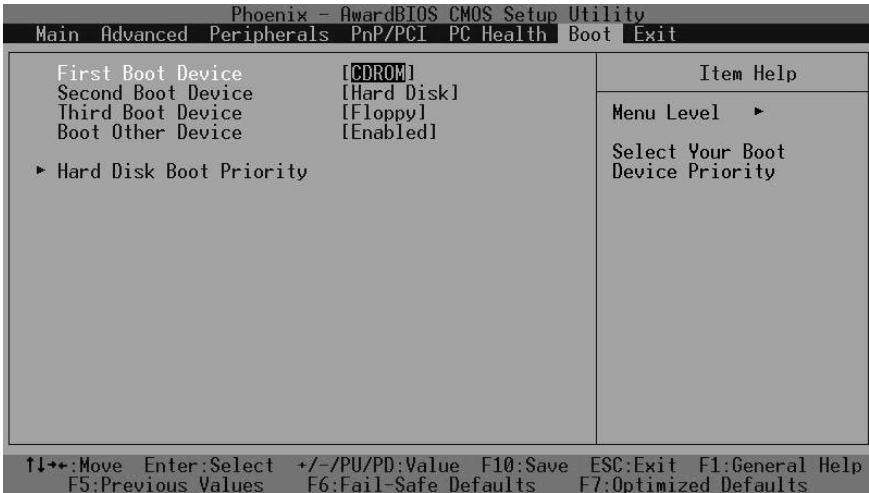


Figure 6 Boot menu

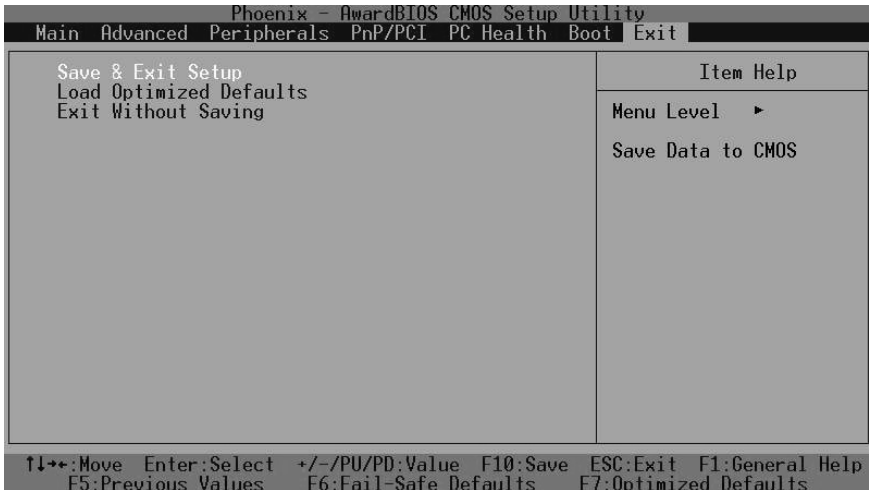
First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice:

- Floppy.....[]
- LS120.....[]
- Hard Disk[]
- CDROM.....[]
- ZIP100[]
- USB-FDD[]
- USB-ZIP[]
- USB-CDROM ..[.]
- On Board LAN...[]
- Disabled.....[]

4.11 Exit Selecting



- Save & Exit Setup
- Load Optimized Defaults
- Exit Without Saving
- Load Fail-Save Default

Figure 8 Exit menu

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? **Y**

Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? **N**

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values that are factory settings for safety system operations.

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? **N**

Pressing 'Y' loads the default values that are factory settings for Fail-Safe system operations.